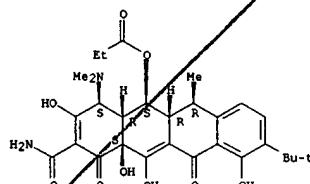


L6 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2000 ACS
 ACCESSION NUMBER: 1999487218 CAPLUS
 DOCUMENT NUMBER: 131:116106
 TITLE: synthesis and antibacterial activity of tetracycline compds.
 INVENTOR(S): Levy, Stuart B.; Nelson, Mark L.
 PATENT ASSIGNEE(S): Trustees of Tufts College, USA
 SOURCE: PCT Int. Appl., 47 pp.
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:
 PATENT NO. KIND DATE APPLICATION NO. DATE
 WO 9937307 A1 19990729 WO 1999-US1393 19990122
 DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS,
 JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK,
 MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,
 TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD,
 RU, RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,
 ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,
 CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
 AU 9924660 A1 19990809 AU 1999-24660 19990122
 PRIORITY APPLN. INFO.: US 1998-PV72262 19980123
 WO 1999-US1393 19990122
 OTHER SOURCE(S): MARPAT 131:116106
 AB Synthesis of substituted tetracycline compds. (I) (R1 = alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfonyl, alkylsulfonamido, arylalkyl; R2 = alkanoyl, acroyl, alkylaroyl, carbacyclic aryl, heteroarom., alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfonyl, alkylaminoo, arylalkyl, carbacyclic aryl, heteroarom., heterocyclic) that exhibit significant antibacterial activity, including gram-pos. and gram-neg. bacteria, and gram-pos. and gram-neg. tetracycline sensitive and tetracycline resistant

L6 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2000 ACS (Continued)
 bacteria is presented. Thus, I (R1 = Me3C, R2 = EtCO, R3 = H) (II) was prepd. in two steps by acylation of doxycycline with propionic acid followed by alkylation with t-butanol. II showed and MIC of 6.25 μg/mL against methicillin resistant S. aureus.

IT 233585-95-0P 233586-00-0P 233586-01-1P
 233586-02-2P 233586-14-6P 233586-23-7P
 233586-24-8P 233586-26-0P
 RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (synthesis and antibacterial activity of tetracycline compds.)
 RN 233585-95-0 CAPLUS
 CN 2-Naphthacenecarboxamide, 4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-(1-oxopropoxy)-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 233586-00-0 CAPLUS
 CN 2-Naphthacenecarboxamide, 5-(2-chloro-1,1-dimethylethyl)-4-(dimethylamino)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-(1-oxopropoxy)-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

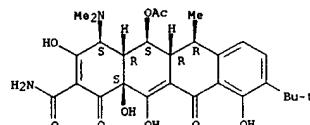
L6 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2000 ACS (Continued)
 RN 233586-01-1 CAPLUS
 CN 2-Naphthacenecarboxamide, 4-(dimethylamino)-9-[1,1-dimethyl-2-(1-piperidinyl)ethyl]-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-(1-oxopropoxy)-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 233586-02-2 CAPLUS
 CN 2-Naphthacenecarboxamide, 5-(acetyloxy)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

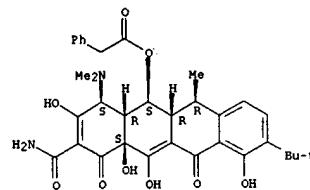
Absolute stereochemistry.

L6 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2000 ACS (Continued)



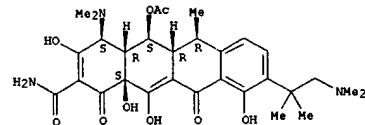
RN 233586-14-6 CAPLUS
 CN Benzenoacetic acid, (4S,4aR,5S,5aR,6R,12aS)-2-(aminocarbonyl)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-naphthacenyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



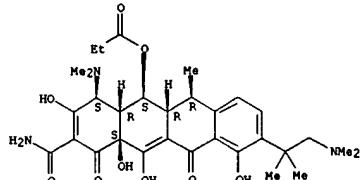
RN 233586-23-7 CAPLUS
 CN 2-Naphthacenecarboxamide, 5-(acetyloxy)-4-(dimethylamino)-9-[2-(dimethylamino)-1,1-dimethylethyl]-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



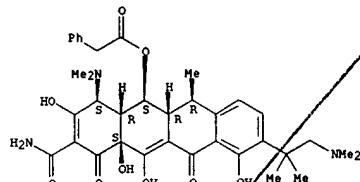
L6 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2000 ACS (Continued)
 RN 233586-24-8 CAPLUS
 CN 2-Naphthacencarboxamide, 4-(dimethylamino)-9-(2-(dimethylamino)-1,1-dimethylethyl)-1,4,4a,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-(1-oxopropoxy)-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 233586-26-0 CAPLUS
 Benzeneacetic acid, (4S,4aR,5S,5aR,6R,12aS)-2-(aminocarbonyl)-4-(dimethylamino)-9-(2-(dimethylamino)-1,1-dimethylethyl)-1,4,4a,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-naphthacenyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 7
 REFERENCE(S):
 (1) Bernardi, US 3901942 A 1975
 (2) Levy, US 5258372 A 1993
 (4) Levy, US 5064821 A 1991 CAPLUS

L6 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2000 ACS
 ACCESSION NUMBER: 19991487217 CAPLUS
 DOCUMENT NUMBER: 131:116105
 TITLE: synthesis and antibacterial activity of tetracycline-type compounds
 INVENTOR(S): Levy, Stuart B.; Nelson, Mark L.
 PATENT ASSIGNEE(S): Trustees of Tufts College, USA
 SOURCE: PCT Int. Appl., 56 pp.
 CODEN: PIXX02
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9937306	A1	19990729	WO 1999-US1343	19990122
DE, W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9922346	A1	19990809	AU 1999-23346	19990122
PRIORITY APPLN. INFO.: AU 9922346			US 1998-PV72262	19980123
			WO 1999-US1343	19990122

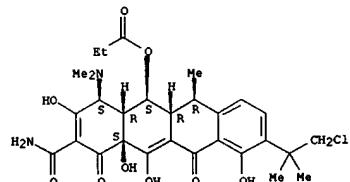
OTHER SOURCE(S): MARPAT 131:116105
 AB Synthesis of substituted tetracycline-type compds. (I) (R1 = alkyl, alkenyl, alkyne, alkoxy, alkylthio, alkylsulfonyl, alkylamino, arylalkyl; R2 = alkanoyl, acetyl, alkylaroyl, carbacyclic aryl, heteroarom, alkyl, alkenyl, alkyne, alkoxy, alkylthio, alkylsulfonyl, alkylamino, arylalkyl; R3 = H, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfonyl, alkylsulfonyl, alkylamino, arylalkyl, carbacyclic aryl, heteroarom, heterocyclic) that exhibit significant antibacterial activity, including against both gram-pos. and gram-neg. bacteria is presented. Thus, I (R1 = Me3C, R2 = EtCO, R3 = H) (II) was prepd. in two steps by acylation of doxycycline with propionic acid followed by alkylation with t-butanol. II showed an MIC of 6.25 μg/mL against methicillin resistant S. aureus.

IT 233586-00-0 CAPLUS
 RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (synthesis and antibacterial activity of tetracycline-type compds.)

L6 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2000 ACS (Continued)
 (5) Levy, US 5589470 A 1996 CAPLUS
 (7) Trustees Of Tufts College, WO 9308806 A1 1993 CAPLUS
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2000 ACS (Continued)
 SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (synthesis and antibacterial activity of tetracycline-type compds.)
 RN 233586-00-0 CAPLUS
 CN 2-Naphthacencarboxamide, 4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-(1-oxopropoxy)-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

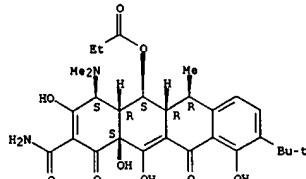
Absolute stereochemistry.



IT 233586-95-08 233586-01-1P 233586-02-2P
 233586-14-6P 233586-23-7P 233586-24-8P
 233586-26-08 233586-50-0P 233586-51-1P
 233586-55-5P 233586-56-6P 233586-57-7P
 233586-62-4P 233586-63-5P 233586-66-8P
 233586-68-08 233586-69-1P 233586-71-5P
 RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (synthesis and antibacterial activity of tetracycline-type compds.)
 RN 233586-95-0 CAPLUS
 CN 2-Naphthacencarboxamide, 4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-(1-oxopropoxy)-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

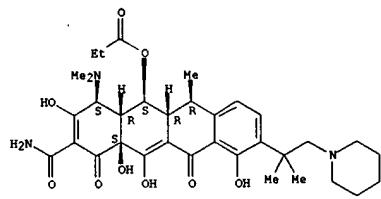
Absolute stereochemistry.

L6 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2000 ACS (Continued)



RN 233586-01-1 CAPLUS
CN 2-Naphthacenecarboxamide, 4-(dimethylamino)-9-[1,1-dimethyl-2-(1-piperidinyl)ethyl]-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-(1-oxopropoxy)-, (4S,4aR,5S,5aR,6R,12aS)- (9CI)
(CA INDEX NAME)

Absolute stereochemistry.



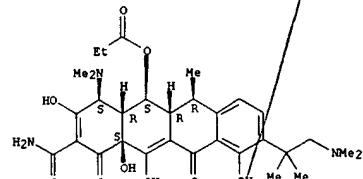
RN 233586-02-2 CAPLUS
CN 2-Naphthacenecarboxamide, 5-(acetyloxy)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

L6 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2000 ACS (Continued)

RN 233586-24-8 CAPLUS
CN 2-Naphthacenecarboxamide, 4-(dimethylamino)-9-[2-(dimethylamino)-1,1-dimethylethyl]-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-(1-oxopropoxy)-, (4S,4aR,5S,5aR,6R,12aS)- (9CI)
(CA INDEX NAME)

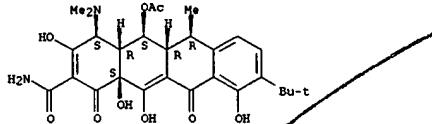
Absolute stereochemistry.



RN 233586-26-0 CAPLUS
CN Benzeneacetic acid, (4S,4aR,5S,5aR,6R,12aS)-2-(aminocarbonyl)-4-(dimethylamino)-9-[2-(dimethylamino)-1,1-dimethylethyl]-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-naphthacenyl ester (9CI) (CA INDEX NAME)

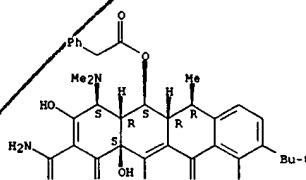
Absolute stereochemistry.

L6 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2000 ACS (Continued)



RN 233586-14-6 CAPLUS
CN Benzenoacetic acid, (4S,4aR,5S,5aR,6R,12aS)-2-(aminocarbonyl)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-naphthacenyl ester (9CI) (CA INDEX NAME)

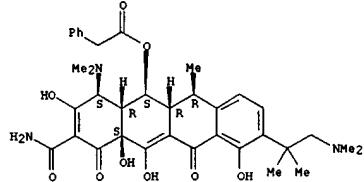
Absolute stereochemistry.



RN 233586-23-7 CAPLUS
CN 2-Naphthacenecarboxamide, 5-(acetyloxy)-4-(dimethylamino)-9-(2-(dimethylamino)-1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

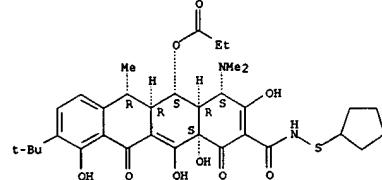
Absolute stereochemistry.

L6 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2000 ACS (Continued)



RN 233586-50-0 CAPLUS
CN 2-Naphthacenecarboxamide, N-(cyclopentylthio)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-(1-oxopropoxy)-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

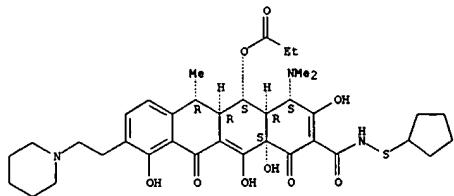
Absolute stereochemistry.



RN 233506-51-1 CAPLUS
CN 2-Naphthacenecarboxamide, N-(cyclopentylthio)-4-(dimethylamino)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-(1-oxopropoxy)-9-(2-(1-piperidinyl)ethyl)-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

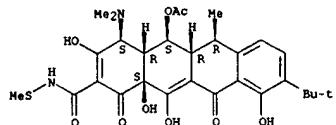
Absolute stereochemistry.

L6 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2000 ACS (Continued)



RN 233586-55-5 CAPLUS
CN 2-Naphthacencarboxamide, 5-(acetoxy)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-N-(methylthio)-1,11-dioxo-, (4S,4aR,5S,5aR,6R,12aS)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

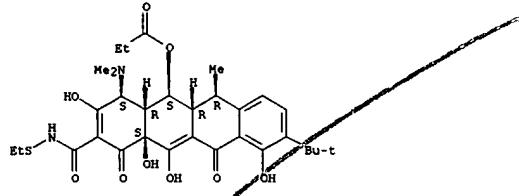


RN 233586-56-6 CAPLUS
CN 2-Naphthacencarboxamide, 4-(dimethylamino)-9-(1,1-dimethylethyl)-N-(ethylthio)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-(1-oxopropoxy)-, (4S,4aR,5S,5aR,6R,12aS)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

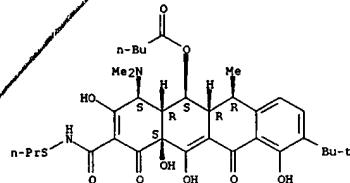
Absolute stereochemistry.

L6 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2000 ACS (Continued)



RN 233586-57-7 CAPLUS
CN Pentanoic acid, (4S,4aR,5S,5aR,6R,12aS)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-2-[(propylthio)amino]carbonyl-5-naphthalenyl ester (9CI) (CA INDEX NAME)

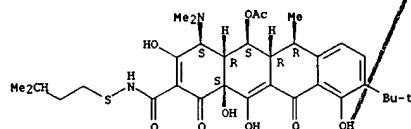
Absolute stereochemistry.



RN 233586-62-4 CAPLUS
CN 2-Naphthacencarboxamide, 5-(acetoxy)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-N-[(3-methylbutyl)thio]-1,11-dioxo-, (4S,4aR,5S,5aR,6R,12aS)-(9CI) (CA INDEX NAME)

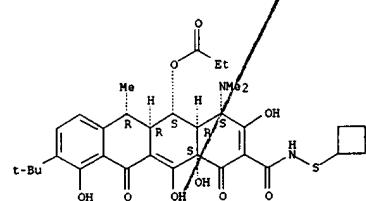
Absolute stereochemistry.

L6 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2000 ACS (Continued)



RN 233586-63-5 CAPLUS
CN 2-Naphthacencarboxamide, N-(cyclobutylthio)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-(1-oxopropoxy)-, (4S,4aR,5S,5aR,6R,12aS)-(9CI) (CA INDEX NAME)

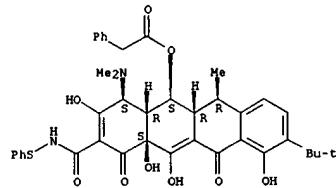
Absolute stereochemistry.



RN 233586-66-8 CAPLUS
CN Benzeneacetic acid, (4S,4aR,5S,5aR,6R,12aS)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-2-[(phenylthio)amino]carbonyl-5-naphthalenyl ester (9CI) (CA INDEX NAME)

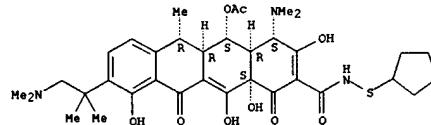
Absolute stereochemistry.

L6 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2000 ACS (Continued)



RN 233586-68-0 CAPLUS
CN 2-Naphthacencarboxamide, 5-(acetoxy)-N-(cyclopentylthio)-4-(dimethylamino)-9-(2-(dimethylamino)-1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-, (4S,4aR,5S,5aR,6R,12aS)-(9CI) (CA INDEX NAME)

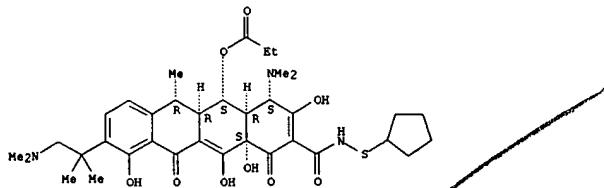
Absolute stereochemistry.



RN 233586-69-1 CAPLUS
CN 2-Naphthacencarboxamide, N-(cyclopentylthio)-4-(dimethylamino)-9-(2-(dimethylamino)-1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-(1-oxopropoxy)-, (4S,4aR,5S,5aR,6R,12aS)-(9CI) (CA INDEX NAME)

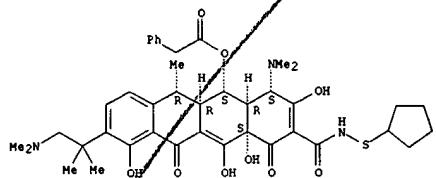
Absolute stereochemistry.

16 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2000 ACS (Continued)



RN 233586-71-5 CAPLUS
 CN Benzenoacetic acid, (4S,4aR,5S,5aR,6R,12aS)-2-[[(cyclopentylthio)amino]carbonyl]-4-(dimethylamino)-9-[2-(dimethylamino)-1,1-dimethylethyl]-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-naphthalenyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 1
 REFERENCE(S): (1) Su; US 5834450 A 1998

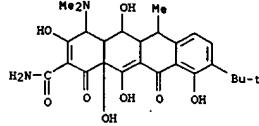
09/234,847

Page 7

=> d ibib ab hitstr

L13 ANSWER 1 OF 1 USPATFULL
 ACCESSION NUMBER: 75:43716 USPATFULL
 TITLE: Tetracycline derivatives substituted in the 7
 position
 INVENTOR(S): and process for preparing the same
 Bernardi, Luigi, Milan, Italy
 Colonna, Vincenzo, Milan, Italy
 De Castiglione, Roberto, Milan, Italy
 Masi, Paolo, Milan, Italy
 PATENT ASSIGNEE(S): Societa' Farmaceutici Italia S.p.A., Milan, Italy
 (non-U.S. corporation)

L13 ANSWER 1 OF 1 USPATFULL (Continued)



NUMBER DATE

 PATENT INFORMATION: US 3901942 19750826
 APPLICATION INFO.: US 1973-397691 19730917 (5)

NUMBER DATE

 PRIORITY INFORMATION: IT 1972-29328 19720918
 DOCUMENT TYPE: Utility
 PRIMARY EXAMINER: Davis, C.
 LEGAL REPRESENTATIVE: Hubbell, Cohen & Stiefel
 NUMBER OF CLAIMS: 5
 EXEMPLARY CLAIM: 1,2
 LINE COUNT: 725
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 AB Process for the preparation of tetracycline derivatives substituted
 in
 the 7 position comprising first obtaining tetracycline derivatives
 substituted in the 7 and 9 positions, transforming the substituent
 in
 the 7 position into the desired substituent, and then eliminating
 the
 substituent in the 9 position. Invention further comprises products
 obtained during the course of the above process.
 IT 53108-30-BP
 (prep. of)
 RN 53108-30-8 USPATFULL
 CN 2-Naphthacenecarboxamide, 4-(dimethylamino)-9-(1,1-dimethylethyl)-
 1,4,4a,5,5a,6,11,12a-octahydro-3,5,10,12,12a-pentahydroxy-6-methyl-1,11-
 dioxo- (9CI) (CA INDEX NAME)

=> d ibib ab hitstr 1-3

L14 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2000 ACS
 ACCESSION NUMBER: 1999:487218 CAPLUS
 DOCUMENT NUMBER: 131:116106
 TITLE: synthesis and antibacterial activity of tetracycline compds.

INVENTOR(S): Levy, Stuart B.; Nelson, Mark L.
 PATENT ASSIGNEE(S): Trustees of Tufts College, USA
 SOURCE: PCT Int. Appl., 47 pp.
 CODEN: PIXXD2

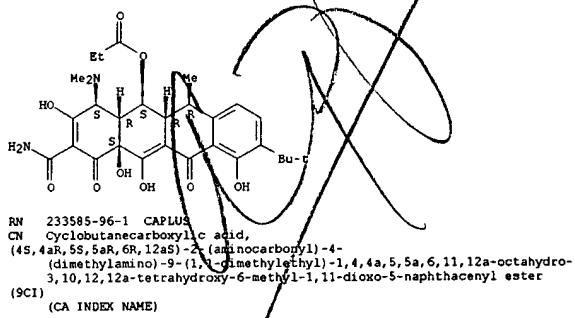
DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9937307	A1	19990729	WO 1999-US1393	19990122
		W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG		
AU 9924660	A1	19990809	AU 1999-24660	19990122
			US 1998-PV72262	19980123
			WO 1999-US1393	19990122

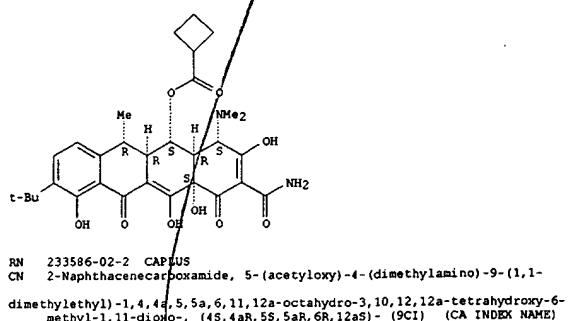
PRIORITY APPLN. INFO.: MARPAT 131:116106

OTHER SOURCE(S): AB Synthesis of substituted tetracycline compds. (I) (R1 = alkyl, alkenyl, alkynyl, alkoxyl, alkylthio, alkylsulfonyl, alkylsulfonfyl, alkylamino, arylalkyl; R2 = alkanoyl, acroyl, alkylacroyl, carbacyclic aryl, heteroarom, alky, alkenyl, alkynyl, alkoxyl, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, carbacyclic aryl, heteroarom., heterocyclic) that exhibit significant antibacterial activity, including gram-pos. and gram-neg. bacteria, and gram-pos. and gram-neg. tetracycline sensitive and tetracycline resistant

L14 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2000 ACS (Continued)



Absolute stereochemistry.



Absolute stereochemistry.

L14 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2000 ACS (Continued)
 bacteria is presented. Thus, I (R1 = Me3C, R2 = EtCO, R3 = H) (II) was

prep'd. in two steps by acylation of doxycycline with propionic acid followed by alkylation with t-butanol. II showed and MIC of 6.25 .mu.g/ml

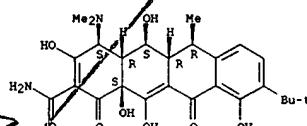
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233586-02-2P 233586-13-5P 233586-14-0P
233586-15-7P 233586-16-8P 233586-17-9P

RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(synthesis and antibacterial activity of tetracycline compds.)

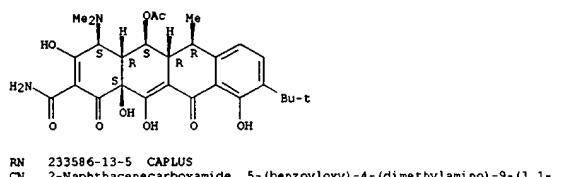
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 CN 2-Naphthacenecarboxamide, 4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

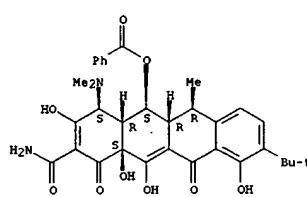


Absolute stereochemistry.

L14 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2000 ACS (Continued)



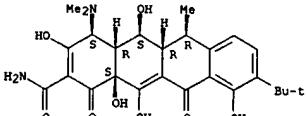
Absolute stereochemistry.



Absolute stereochemistry.

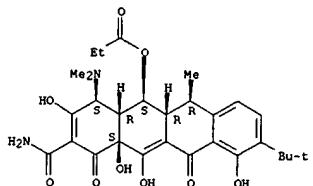
L14 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2000 ACS (Continued)
 233586-15-7P 233586-16-0P 233586-17-9P
 RL: BAC (Biological activity or effector, except adverse); SPN
 (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP
 (Preparation); USES (Uses)
 (synthesis and antibacterial activity of tetracycline-type compds.)
 RN 233585-94-9 CAPLUS
 CN 2-Naphthacenecarboxamide, 4-(dimethylamino)-9-(1,1-dimethylethyl)-
 1,4,4a,5,5a,6,11,12a-octahydro-3,5,10,12,12a-pantahydroxy-6-methyl-1,11-
 dioxo-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 233585-95-0 CAPLUS
 CN 2-Naphthacenecarboxamide, 4-(dimethylamino)-9-(1,1-dimethylethyl)-
 1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-
 dioxo-3-[1-oxopropoxy]-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

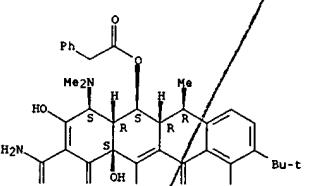


RN 233585-96-1 CAPLUS
 CN Cyclobutanecarboxylic acid,
 (4S,4aR,5S,5aR,6R,12aS)-2-(aminocarbonyl)-4-

L14 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2000 ACS (Continued)

RN 233586-14-6 CAPLUS
 CN Benzoic acid, (4S,4aR,5S,5aR,6R,12aS)-2-(aminocarbonyl)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-naphthacenyl ester
 (9CI) (CA INDEX NAME)

Absolute stereochemistry.

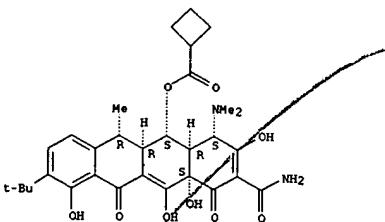


RN 233586-15-7 CAPLUS
 CN Carbamic acid, dimethyl-, (4S,4aR,5S,5aR,6R,12aS)-2-(aminocarbonyl)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-naphthacenyl ester
 (9CI) (CA INDEX NAME)

Absolute stereochemistry.

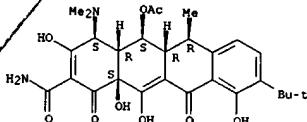
L14 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2000 ACS (Continued)
 (dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-naphthacenyl ester
 (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 233586-02-2 CAPLUS
 CN 2-Naphthacenecarboxamide, 5-(acetoxy)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

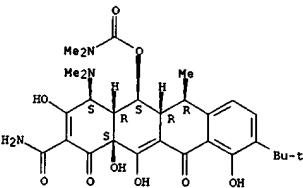
Absolute stereochemistry.



RN 233586-13-5 CAPLUS
 CN 2-Naphthacenecarboxamide, 5-(benzoyloxy)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-, (4S,4aR,5S,5aR,6R,12aS)- (9CI) (CA INDEX NAME)

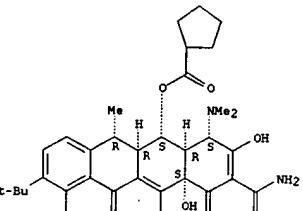
Absolute stereochemistry.

L14 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2000 ACS (Continued)



RN 233586-16-0 CAPLUS
 CN Cyclopentanecarboxylic acid,
 (4S,4aR,5S,5aR,6R,12aS)-2-(aminocarbonyl)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-naphthacenyl ester
 (9CI) (CA INDEX NAME)

Absolute stereochemistry.

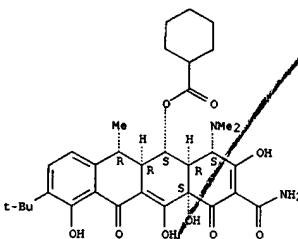


RN 233586-17-9 CAPLUS
 CN Cyclohexanecarboxylic acid,
 (4S,4aR,5S,5aR,6R,12aS)-2-(aminocarbonyl)-4-(dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-naphthacenyl ester
 (9CI) (CA INDEX NAME)

Absolute stereochemistry.

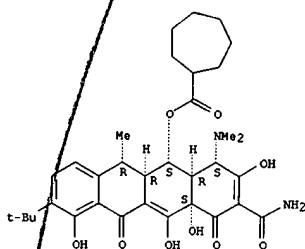
L14 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2000 ACS (Continued)

L14 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2000 ACS (Continued)



RN 233586-18-0 CAPIUS
 CH Cycloheptaneacarbonylic acid,
 (4S,4aR,5S,5aR,6R,12aS)-2-(aminocarbonyl)-4-
 (dimethylamino)-9-(1,1-dimethylethyl)-1,4,4a,5,5a,6,11,12a-octahydro-
 3,10,12,12a-tetrahydroxy-6-methyl-1,11-dioxo-5-naphthalenyl ester
 (9CI)
 (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 1
 REFERENCE(S): (1) Su, US 5834450 A 1998

L14 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2000 ACS
 ACCESSION NUMBER: 1974:477746 CAPLUS
 DOCUMENT NUMBER: 81:77746
 TITLE: Tetracycline derivatives
 INVENTOR(S): Bernardi, Luigi; Colonna, Vincenzo; De Castiglione,

PATENT ASSIGNEE(S): Roberto Masi, Paolo
 Societa Farmaceutici Italia
 SOURCE: Ger. Offen., 39 pp.

CODEN: GWXKBY

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2346535	A1	19740411	DE 1973-2346535	19730915
DE 2346535	B2	19800911		
DE 2346535	C3	19810521		
NL 7312648	A	19740320	NL 1973-12648	19730913
NL 158172	B	19781016		
CA 999855	A1	19761116	CA 1973-181034	19730913
FR 2208885	A1	19740628	FR 1973-33067	19730914
JP 49069653	A2	19740705	JP 1973-104458	19730914
JP 57041458	B4	19820903		
ZA 7307317	A	19740925	ZA 1973-7317	19730914
AU 7360333	A1	19750320	AU 1973-60333	19730914
BE 804913	A1	19740318	BE 1973-135695	19730917
AT 7307996	A	19750615	AT 1973-7996	19730917
AT 328613	B	19760325		
US 3901942	A	19750826	US 1973-397691	19730917
GB 1413347	A	19751112	GB 1973-43564	19730917
HU 167850	P	19751225	HU 1973-501098	19730917
ES 418809	A1	19760316	ES 1973-418809	19730917
SU 574145	D	19770925	SU 1973-1957942	19730917

PRIORITY APPLN. INFO.: IT 1972-29328 19720918
 AB Tetracycline deriv. I (R = H, R1 = e.g., Me, NH2, Me2NH2, F3CCONHCH2, R2

= H, Me; R3 = H, OH) were prep. by the selective alkylation of a tetracycline deriv. in the 9-position, followed by electrophilic substitution in the 7-position and dealkylation. Thus, I (R = R1 =

R2 = R3 = H) was alkylated with Me2C:CH2 in (Me2N)3PO to give I (R = Me3C,

R1 = R2 = R3 = H) which was nitrated with KNO3 and HF, then hydrogenated over

PtO2 to give I (R = Me3C, R1 = NH2, R2 = R3 = H). Reaction of this product with HCHO in the presence of Pd-C followed by dealkylation

with F3CSO3H in PhOMe gave I (R = R2 = R3 = H, R1 = Me2N). About 20 I were prepd.

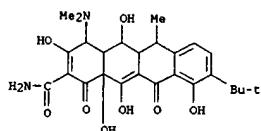
IT 53108-30-B2 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prep. of)

RN 53108-30-8 CAPLUS

CN 2-Naphthalenecarboxamide, 4-(dimethylamino)-9-(1,1-dimethylethyl)-

L14 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2000 ACS (Continued)

1,4,4a,5,5a,6,11,12a-octahydro-3,5,10,12,12a-pentahydroxy-6-methyl-1,11-dioxo- (9CI) (CA INDEX NAME)



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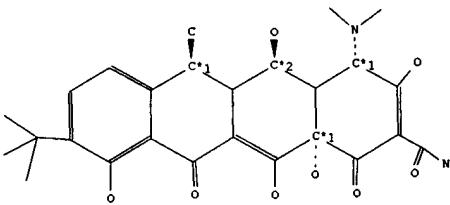
L15 ANSWER 1 OF 1 BEILSTEIN COPYRIGHT 2000 BEILSTEIN CD&S

Beilstein Reg. No. (BRN): 2199135 Beilstein
 Molecular Formula (MF): C₂₆H₃₂N₂O₈
 Synonym (SY): 9-t-Butyl-.alpha.-6-deoxy-5-hydroxytetracyclin
 Autonom Name (AUN): 9-tert-butyl-4-dimethylamino-3,5,10,12,12a-pentahydroxy-6-methyl-1,11-dioxo-1,4,4a,5,5a,6,11,12a-octahydro-naphthalene-2-carboxylic acid amide
 Beilstein Reference (SO): 5-14
 General Comment (NT): Stereo compound
 CAS Reg. No. (RN): 53108-30-8
 Beilstein Pref. RN (BPR): 53108-30-8
 Formula Weight (FW): 500.55
 Lawson Number (LN): 16308; 2017

Ring System Data:

Number of Rings (CNR): 4
 Ring Systems (CNRS): 1
 Diff' Ring Systems (CNDRS): 1
 Ring Heteros (CNRH): 0
 Acyclic Heteros (CNAH): 10

Beilstein Ring Index (BRIX)	Ring System Formula (RF)	BRIX	Count
18.4.12-0.0-5.3	C18		1



Atom/Bond Notes:

1. CIF Descriptor: S
2. CIF Descriptor: R

Preparation:

L15 ANSWER 1 OF 1 BEILSTEIN COPYRIGHT 2000 BEILSTEIN CD&S (Continued)

PRE
 Reference(s):
 1. Patent: Soc. Farm. Italia, DE 2346535 1974
 Chem. Abstr., 81, 77746

CTUNCH Unchecked Data: NMR
 Reference(s):
 1. Patent: Soc. Farm. Italia, DE 2346535 1974
 Chem. Abstr., 81, 77746

CTUNCH Unchecked Data: UV/VIS
 Reference(s):
 1. Patent: Soc. Farm. Italia, DE 2346535 1974
 Chem. Abstr., 81, 77746

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L2 5 S L1
L3 STRUCTURE uploaded
L4 0 S L3
L5 19 S L3 FULL
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L6 2 S L5
FILE 'USPATFULL' ENTERED AT 15:25:14 ON 03 JUN 2000
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L10 STRUCTURE uploaded
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L13 1 S L12
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L15 1 S L10 FULL
FILE 'REGISTRY' ENTERED AT 15:34:08 ON 03 JUN 2000